Volunteer Lake Assessment Program Individual Lake Reports

ASHUELOT POND, WASHINGTON, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	16,000	**Max. Depth (m):**	7.8	**Flushing Rate (yr^{-1}):**	12.5
Surface Area (Ac.):	299	**Mean Depth (m):**	2	**P Retention Coef:**	0.45
Shore Length (m):	8,400	**Volume (m^3):**	2,892,000	**Elevation (ft):**	1445

TROPHIC CLASSIFICATION

Year	Trophic class
1986	MESOTROPHIC
2004	MESOTROPHIC

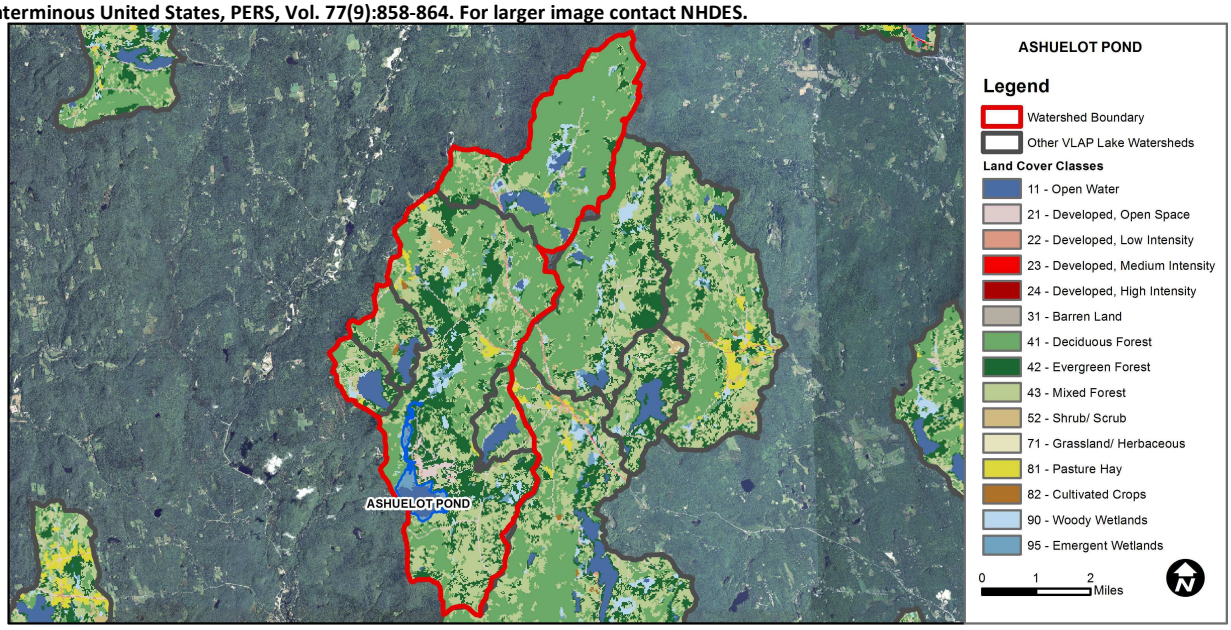
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

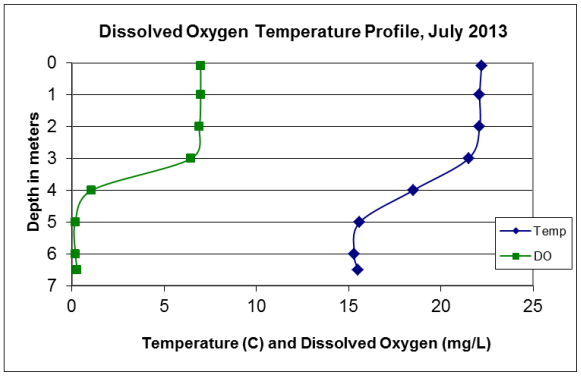


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.63	Barren Land	0.05	Grassland/Herbaceous	0.09
Developed-Open Space	2.73	Deciduous Forest	41.1	Pasture Hay	0.86
Developed-Low Intensity	0.37	Evergreen Forest	19.28	Cultivated Crops	0.1
Developed-Medium Intensity	0	Mixed Forest	24.47	Woody Wetlands	2.59
Developed-High Intensity	0	Shrub-Scrub	1.17	Emergent Wetlands	1.54

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ASHUELOT POND, WASHINGTON, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels increased in August during the height of the growing season, however average levels remained relatively low. Historical trend analysis indicates an improving (decreasing) chlorophyll level since monitoring began.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels remained low and below the state median. Historical trend analysis indicates improving (decreasing) epilimnetic conductivity since monitoring began.
- **E. COLI:** Beach E. coli levels were well below the state standard for public beaches.
- **TOTAL PHOSPHORUS:** Tributary and deep spot phosphorus levels were low throughout the summer. Historical trend analysis indicates a significantly improving (decreasing) phosphorus level since monitoring began.
- **TRANSPARENCY:** Transparency was stable throughout the summer and historical trend analysis indicates a stable transparency with low variability since monitoring began.
- **TURBIDITY:** Deep spot and tributary turbidity levels were relatively low throughout the summer.
- **PH:** pH levels have been historically low and potentially stressful to aquatic life. Historical trend analysis indicates a stable pH with relatively low variability since monitoring began.
- **DISSOLVED OXYGEN:** Epilimnetic dissolved oxygen levels were healthy, however hypolimnetic dissolved oxygen was depleted below. Aquatic life prefers dissolved oxygen levels between 5.0 and 8.0 ug/L.
- **RECOMMENDED ACTIONS:** Historical trend analyses indicate improving chlorophyll and conductivity levels and we hope to see this continue! Maintain current monitoring program and continue to educate lake and watershed residents on ways to improve water quality and reduce stormwater runoff from their properties.



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

Table 1. 2013 Average Water Quality Data for ASHUELOT POND

Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m NVS	Turb. ntu	pH
Epilimnion	0.53	4.65	20.22		9	3.01	0.88	5.64
Hypolimnion			20.89		12		1.27	5.39
Lae Beach Deep				10				
Lae Beach Shallow				5				
Marina Inlet			20.06		9		0.6	5.44
Millen Inlet			21.03		10		0.71	5.6
Nb Crowley Cove			22.00		10		0.87	5.57
Outlet			20.42		10		0.81	5.74
River Inlet			21.83		9		0.63	5.63

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Data shows low variability.	Chlorophyll-a	Improving	Data significantly decreasing.
Conductivity	Improving	Data significantly decreasing.	Transparency	Stable	Data shows low variability.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.